



Analytical studies of post-Medieval glass bottle marks from excavations at Kazan Kremlin (Russia)



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ABSTRACT

Archaeological excavations of the Kazan Kremlin, a UNESCO World Heritage site, revealed stamped glass bottles dated from the second quarter of the 18th to the 19th centuries ACE. Two stamps have the exact date of 1822 and 1884. Most of the glass stamps in our dataset are clearly of Russian origin. All artifacts are lime-rich plant ash glasses, with low soda content. Their chemical composition indicates the use of similar recipe with various sources of glass cullet and straw ash for their manufacture, with the possible addition of wood ash and other components.

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1. Introduction

Large-scale, systematic archaeological excavations of the Kazan Kremlin, situated in the city of Kazan (Russia), were conducted from 1994 to 2005 under the guidance of F.S. Khuzina (Sitdikov and Huzin, 2009). The site is the main historic citadel of the Republic of Tatarstan, built at the order of Ivan the Terrible in the late 16th century ACE on the ruins of the former castle of the Kazan khans, and is a UNESCO

World Heritage site. In 149 test pits over 20,000 m², an extensive collection of glass artifacts was found. This paper is devoted to the study of 14 stamped bottles in this collection, dated to the 18th and 19th centuries ACE.

The practice of marking glass bottles with stamps has been known from the 2nd century ACE, and remained popular afterwards (Hadad, 2002). The largest number of marks on post-Medieval bottles was manufactured in England, the first one being stamped in the middle of the 17th century, on wine bottles bearing the stamp of Oxford taverns, the oldest of which functioned in 1639–1660 (Leed, 1941). More than 2000 different marks of glassware of the 17th to early 20th centuries have been registered (McNulty, 2004). Bottle marks or medallions are

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